

MURAVITSKIY, Yu. N.

data link systems

TECHNICAL FACILITIES OF THE STANDARD DATA LINK SYSTEM

All-Communications
Data Link System

Article by Candidates of Technical Sciences Y. N. Silayev, O. K. Baitenbo, V. I. Shchegolev, Yu. P. Bityutskiy, V. Ye. Muravitskiy, and V. I. Shchegolev. Journal of Communications, Radio and Electronics Engineering, Moscow, February 1, 1973, No. 2, pp. 1-4.

The rational organization of a data link in geographically scattered systems of the type Birens [1] largely determines the economic effectiveness of the entire system.

A data link combines into one system the peripheral subdivisions [2] and the technological data processing center (DPC) [3]. The link is a set of channels and technical facilities that provide a high communication channel utilization coefficient, reliable transmission and processing of data and direct multichannel communications. Accordingly, the technical facilities of a link are divided into three groups: data traffic concentration facilities (DTC); data exchange reliability group and multichannel communications group.

Means of Concentrating Data Flows

The purpose of facilities of this group is to ensure economically efficient utilization of uncommunicated channels K_c for a given subscriber servicing quality. The prerequisites for intensive application of various data traffic concentration methods in a data link were formulated in [1].

According to the criterion $\phi = l_i/l_j$ of the ratio of distances between the sources (1-n) and the concentrator K and between the concentrator and DPC, the following methods of traffic concentration may be used (Figure 1): local concentration ($l_i < l_j$; $l_i < 100$ m); central traffic concentration ($l_i < l_j$; $l_j < 100$ m); concentration of data from geographically scattered points ($l_i = l_j$; $l_i, l_j > 100$ m). The technical facilities of DTC may be based on the utilization of the principles of demultiplexing of either the channels or the traffic.

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[L - USSR - R]

JPRS 59662
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CARD

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--KINETICS OF THE DECOMPOSITION OF SOLID SOLUTION OF ARSENIC IN
GERMANIUM -U-
AUTHOR--(05)--ARSENTYEVA, I.P., GRINSHTEYN, P.M., LIDER, V.V., MURAVLEV,
YU.B., RZHZANSKIY, V.N.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1260-1
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL KINETICS, SOLID SOLUTION, ARSENIC ALLOY, GERMANIUM
ALLOY, SINGLE CRYSTAL, HALL CONSTANT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0373 STEP NO--UR/0181/70/012/004/1260/1261
CIRC ACCESSION NO--AP0126128
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NU--AP0126128

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE CRYSTALS OF GE WERE INVESTIGATED WHICH CONTAINED 3.6 TIMES 10 PRIME19 ATOMS AS-ON PRIME3. THE CONCN. OF CURRENT CARRIERS WAS CALCD. FROM THE HALL COEFF. MEASURED BY THE COMPENSATION METHOD AT CONST. CURRENT. A KINETIC CURVE IS GIVEN OF THE DECCMPN. OF THE SOLID SOLN. OF AS IN GE AT 550DEGREES. IT WAS OBTAINED FROM THE DATA ON THE CONCN. OF CURRENT CARRIERS AS A FUNCTION OF THE TIME OF ANNEALING. THE CURVE CONSISTS OF 3 LINEAR SECTIONS. IN THE 1ST SECTION NUCLEI ARE FORMED AND THEIR NO. INCREASES WITH TIME, SECTION 2 REPRESENTS A DIFFUSION LIMITING PROCESS OF GROWTH OF PLATELIKE SEPNs., AND IN SECTION 3 THE PROCESS OF SEPN. IS SLOWED DOWN BECAUSE OF COALESCENCE OF THE PARTICLES. FACILITY: GOS. NAUCH. ISSLED. PROEKT. INST. REDKOMETAL. PROM., MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE ROLE OF THE ROENTGENOLOGICAL TECHNIQUE IN THE PLANNING OF
RADIATION TREATMENT OF TUMORS OF PALATINE TONSILS -U-
AUTHOR--(02)-ZVEKOTKINA, L.S., MURAVSKAYA, G.V. *m*
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970. VOL 15, NR 6, PP 19-22
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TUMOR, IRRADIATION, X RADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1517 STEP NO--UR/0241/70/015/006/0019/0022
CIRC ACCESSION NO--AP0128912
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 025

CIRC ACCESSION NO--AP0128912

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF DATA OF INVESTIGATIONS OF ROENTGENOLOGICAL DATA IN 30 PATIENTS WITH MALIGNANT TUMORS OF PALATINE TONSILS THE AUTHORS DISCUSS THE CONDITIONS OF IRRADIATION OF THE PRIMARY FOCUS, ZONES OF REGIONAL METASTASIZATION AND ADJACENT ORGANS IN DIFFERENT POSITIONS OF THE PATIENT DURING TREATMENT. THE RESULTS OBTAINED ENABLE TO RECOMMEND THE USE OF THE ROENTGENOLOGICAL METHOD FOR THE CHOICE OF THE OPTIMAL POSITION OF THE PATIENT DURING TREATMENT, INDIVIDUAL DETERMINATION OF THE SIZES OF IRRADIATION FIELDS CENTRATION. THE FINAL VERIFICATION OF THE CORRECTNESS OF THE CHOICE OF IRRADIATION CONDITIONS SHOULD BE CARRIED DURING GAMMAGRAPHY. FACILITY: OTDEL RETGENO-RADIOODIAGNOSTIKI I LUCHEVOY TERAPII, MUSKOVSKOGO NAUCHNO ISSLEDOVATEL'SKOGO ONKOLOGICHESKOGO INSTITUTA IM. P. A. GERTSENA.

UNCLASSIFIED

USSR

UDC 621.385.632

ALESKOVSKIY, A.M., ZAMOROZKOV, B.M., MEL'NIKOV, V.P., MURAV'YEV, A.A., RADYUK, O.M.

"Experimental Investigation Of Persistence Of Beam Plasma In TWT"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 59-63

Translation: The paper investigates the persistence of disintegrating beam plasma in a medium-power traveling-wave tube, with the object of detecting possible distortions of the information on the structure of the beam by use of the photoregistration method. It is established that in the region where glow fills all the flight channel, distortions are possible, caused by the appearance in the beam of slow secondary electrons. 2 ref. Summary.

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USSR

UDG 621. 385. 032. 26: 621. 385. 6: 621. 317. 3 (088.8)

MIRAV'YEV, A.A., MALAKHOV, I.K., ZAMOROZKOV, B.M., RADYUK, O.M., SINITSYN, P.R.,
YUDZON, O.I.

"Method Of Investigation Of The Structure Of An Electron Beam"

USSR Author's Certificate No 265176, filed 18 Sept 67, published 17 June 70 (from
RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A124P)

Translation: A method is proposed for investigation of the structure of an electron beam without the introduction into it of perturbations which are employed in the evaluation of the quality of electron beams under the dynamic operating conditions of electrovacuum microwave devices. The method is based on use of the glow of the beam and makes it possible to observe simultaneously on the screen of a monitoring television device the form of the beam and the distribution of the intensity of its glow at any cross section of the beam being inspected, and also operationally to change the parameters of the beam, visually selecting the form of the beam and the distribution of its density, O.B.

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USSR

UDC 621.385.012.26:621.385.5

RADYUK, G.M., MIRAV'YEV, A.A., KALININ, YU.A.

"Evaluation Of The Effect Of Changes Of The Regimes Of A Gun On The Behavior Of An Electron Beam"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology--Collection Of Works), Saratov, 1970, pp 56-61 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6A132)

Translation: It is shown that in a traveling-wave tube with periodic magnetic focusing, shrinkages (osedeniye) of the current of the gun in the decelerating system bear a local character. The shrinkage density of the current does not always depend on the over-all current of the shrinkage. Local shrinkages of the current are shifted in the system during change of operating conditions of the traveling-wave tube. Summary.

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USSR

UDC 621.791.39.62-82:62-415

MIRAY'YEV, B. I., and SOLOV'YEV, Yu. I., Engineers, Leningrad Branch of All-Union Scientific Research Institute for Medical Instruments and Equipment

"Clamping Device for Welding Longitudinal Seams of Specimens of Thin Sheet Material"

Moscow, Svarochnoye Proizvodstvo, No 6, 1971, pp 57-58

Abstract: A description and diagram of a hydraulic clamping device for welding longitudinal seams in thin sheet material are presented. The sheets are clamped against plates by ten independent point clamps, each of which can be adjusted for length and pressure. Formulas are presented for determination of the clamping force as a function of pressure in the hydraulic cylinder.

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1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PRODUCTION OF VALERIAN GALENICALS USING CONDENSED CARBON DIOXIDE
-U-
AUTHOR--MURAVYEV, I.A., KECHATOV, YE.A., SMETANIN, YU.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. FARM. ZH. 1970, 4(1), 48-51
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DRUG PRODUCTION, CARBON DIOXIDE, PROCESSED PLANT PRODUCT

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/1645 STEP NO--UR/0450/70/004/001/0048/0051
CIRC ACCESSION NO--AP0101700

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101700

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROOTS OF THE VALERIAN PLANT (17 KG), MACERATED AND CRUSHED BY MILLING, WERE LOADED IN EXTRACTORS AND THE EXTRACTORS HERMETICALLY SEALED. AFTER FILLING UP THE EXTRACTORS WITH GASEOUS CO SUB2 FROM A TANK ON TOP OF THE EXTRACTORS TO A GIVEN PRESSURE, CONDENSED CO SUB2 GAS FORMED OVER THE MATERIAL. THE EXTN. WAS CARRIED OUT AT 25DEGREES AT 65 ATM FOR 3 HR. THE MICELLES FROM THE EXTRACTORS WERE FED INTO A FILTER, AND THE FILTRATE INTO AN EVAPORATOR FOR REMOVING THE EXTRACTANT. THE NATIVE EXT. THUS OBTAINED WAS A MOBILE LIQ. WITH THE CHARACTERISTIC ODOR OF THE STARTING CRUDE. THE YIELD WAS 2.2PERCENT BASED ON THE STARTING CRUDE. A DIAGRAM OF THE APP. IS GIVEN.

UNCLASSIFIED

USSR

UDC: 547.26'118

ZEMLYANSKIY, N. I., BELOUS, G. F., ~~MURAV'YEV, I. N.~~, L'vov State University
imeni Ivan Franko

"Investigation of the Properties of Tetrathiophosphate Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1273-1277

Abstract: A number of asymmetric neutral esters of tetrathiophosphoric acids, brominated trialkyl tetrathiophosphates, and bis(dialkyltetrathiophosphoryl)-alkenes were synthesized by alkylating triethylammonium and potassium salts of dialkyltetrathiophosphoric acids with alkyl halides, alkenes, alkynes, and also alkylene dihalides. It was found that dialkyl allyl tetrathiophosphates add O,O-diethyldithiophosphoric acid in the presence of benzoyl peroxide contrary to Markovnikov's rule. S,S-Alkylene(dialkyldithiophosphoryl)dialkyl tetrathiophosphates and dialkyl S- γ -thiocyanopropyl tetrathiophosphates were synthesized by dialkyl S- $\beta(\gamma)$ -bromoalkyl tetrathiophosphate alkylation of O, O-dialkyl dithiophosphates and potassium thiocyanate, respectively.

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USSR

UDC 547.26'118

ZENLYANSKIY, N. I., BELOUS, G. F., MURAV'YEV, I. V., L'vov State University
imeni I. Franko

"Concerning the Synthesis and Some Properties of Heterocyclic Tetrathio-
phosphates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1647-1648

Abstract: Phosphorus pentasulfide reacted with alkanedithiols in the presence of triethylamine to give triethylammonium salts of alkyltetra-thiophosphoric acids (I) in which the heteroring consists of methylene groups, sulfur atoms and phosphorus. Reaction of potassium alkoxide with compounds (I) gave the corresponding potassium salts. Alkylation of compounds (I) with alkyl halides or alkyl esters of benzenesulfonic acids produced neutral esters of cyclic tetrathio-phosphoric acids.

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USSR

UDC 547.1'118'122:621.892.009.6

GORBASH, YU. T., KHARCHENKO, L. S., RABINOVICH, I. L., BACHINSKIY, T. P.,
GUPALO, A. P., ZEMLYANSKIY, N. I., KOTOVICH, B. P., and MURAV'YEV, I. V.,
All-Union Scientific Research and Project and Design Institute of the
Petroleum Conversion and Petrochemical Industry, Kiev

"Investigation of Sulfur-Containing Organophosphorus Compounds as Additives
to Lubricating Oils"

Moscow, Neftekhimiya, Vol 11, No 1, Jan-Feb 71, pp 135-140

Abstract: The effectiveness of derivatives of thiophosphoric acid as addi-
tives to lubricating oil was studied. Fifteen compounds of this type
including O,O-dialkyl-S-alkyl dithiophosphates, O-diethylaminoethyl-S,S-dipro-
pyl trithiophosphate, bis(O,O-diethyldithiophosphate)-benzylidene, bis(O-
methyl-O-butylthiophosphone)disulfide, O-alkyl-S,S-dialkyl trithiophosphates,
and S,S,S-tetraethyl tetrathiothiophosphate were synthesized for this purpose.
The formulas and characteristics of these compounds are listed in a table.
The effects of addition of the 15 compounds to oil DS-11 on the thermal
oxidation stability of the oil, the corrosion of Pb plates, the over-all
index of wear, the critical load of seizing, and the critical load of welding
were determined and compared with those of additive DF-11 (Zn butyloctyl-
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CORDASH, YU. T., et al., Neftekhimiya, Vol 11, No 1, Jan-Feb 71, pp 135-140

dithiophosphate). The results of the tests showed that use of trialkyl tetrathiophosphates, bis(0,0-dialkylthiophosphone)disulfides, and 0-dialkyl-aminoalkyl-S,S-dialkyl trithiophosphates as multifunctional additives to lubricating oils would be of advantage. The effects of the CCl_3 group in reducing wear and seizing of friction surfaces were confirmed by the results of tests on dithiophosphates containing an $-\text{SC}(=\text{O})\text{CCl}_3$ group. The tests with 0,0-difurfuryl-S-trichloroacetyl dithiophosphate indicated that this compound would be a good all-around additive for lubricating oils.

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UDC 547.26'118

USSR

ZEMLYANSKIY, N. I., BELOUS, G. F., MURAV'YEV, I. V.

"Interaction of Tetrathiophosphates with Alcohols"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 54-55

Abstract: The dipotassium salts of O-alkyltrithiophosphoric acids easily interact with alcohols in the presence of hydrogen chloride with replacement of one sulfohydriyl radical by an alkoxyl radical and the formation of asymmetric acid O,O'-dialkyldithiophosphates. In this connection, the capacity of the triethylamine salts of S-alkyl and dialkyltetrathiophosphoric acids to replace sulfalkyl radicals by alkoxyl radicals on their interaction with alcohols and phenols in the presence of hydrogen chloride was proved. The physical constant and results of the analyses are tabulated.

Mixtures of triethylamine salts of butyl and dibutyltetrathiophosphoric acid with ethyl alcohol; triethylamine salt of dibutyltetrathiophosphoric acid with ethyl and allyl alcohols; triethylamine salt of diethyltetrathiophosphoric acid with propyl, propargyl alcohols and phenol were also subjected to the conversion. The data show that not only one of the two sulfohydriyl radicals of the alkyltetrathiophosphate is easily replaced by an alkoxyl group but also the sulfoalkyl radicals both in the alkyltetrathiophosphate and in the dialkyltetrathiophosphate.

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USSR

UDC 547.26'118

GORAK, R. D., ZEMLYANSKIY, N. I., ~~MURAV'YEV, I. V.~~

"Interaction of Phosphorus Pentaselenide with Alcohols in the Presence of Triethylamine"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 56-58

Abstract: Experimental results are presented showing that phosphorus pentaselenide reacts with alcohols in the presence of triethylamine in the ratio 1:4:2 with the formation of O,O-dialkyldiselenophosphates. A mixture of O-alkyltriselenophosphates and O,O'-dialkyldiselenophosphates is formed in the molar ratio of 1:3:3. By alylation of potassium O-alkyltriselenophosphates, the middle esters of O-alkyl-Se,Se'-dialkyltriselenophosphoric acid were obtained. The experimental procedure for obtaining the mentioned compounds and the yields are described.

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USSR

UDC [537.226+537.311.33]:[537+535]

SHALIMOVA, K. V., VORONKOV, E. N., and MURAV'YEV, L. N.

"Kinetic Study of Photoconductivity of Cadmium Telluride Films"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgruppy tsinka i galliya (Thin Films of Tellurium Compounds With Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, p 22 (From RZh-Fizika, No 10, Oct 71, Abstract No 10YE800 by authors)

Translation: A kinetic study was made of the photoconductivity of CdTe thin layers obtained by the method of vacuum condensation on various substrates. Basic parameters were determined for films annealed in Cd and Te vapor as well as those doped with elements of the first, third, and seventh groups of the periodic system of elements. The authors investigated the lux-ampere and relaxation photocurrent characteristics in the 100-400° K temperature range. On the basis of the results obtained an estimate was made of the trapping and recombination center parameters.

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USSR

UDC: 53:731.3

MURAV'YEV, M. D.

"Investigation of Fundamental Processes of Thermodynamics by the Method of Physicomathematical Deduction. Second Revised and Enlarged Edition"

Issledovaniye osnovnykh protsessov fiziko-matematicheskoy deduktsii. Izd. 2-ye, pererab. i dop. (Tr. Belorus. in-ta inzh. zh.-d. transp., vyp. 86)
(cf. English above. [Works of the Belorussian Institute of Railway Transportation Engineers, No 86]), Minsk, "Vysheysh. shkola", 1971, 52 pp, ill. 22 k. (from RZh-Fizika, No 4, Apr 72, Abstract No 4A53 K)

Translation: The monograph covers fundamental processes of thermodynamics which are studied by a deductive method. This method is classical in science and is applicable to thermodynamics. The essence of the method consists in a logical transition from physical quantities characterizing a polytropic process to these same quantities characterizing particular processes which have practical significance for contemporary thermal power engineering. The monograph is written for instructors and for graduate and undergraduate students in higher educational institutions. Resumé.

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USSR

UDC: 632.95

MURAV'YEV, N. N.

"Some Data on the Mechanism of the Toxic Action of Tetrahydrothiadiazines"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Pesticides -- Safety Measures in Using, Toxicology, and the Poison Clinic--collection of works), vyp. 9, Kiev, 1971, pp 216-221 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7N621)

Translation: Editon (I) reduced the activity of succinate dehydrogenase of the liver and kidneys by 20-40%, and the activity of coaguloplasmin in the blood serum by 36-61% when rats were injected with a single toxic dose of editon (I), and when small doses (14 and 56 mg/kg) were administered for a long period. Toxic doses of I inhibited the leucopoietic function of the organism. In acute and chronic experiments, I slowed down assimilation of blood sugar by the liver, considerably depressed the antitoxic function of the liver, and in connection with the latter, caused a sharp increase in the duration of hexenal sleep. The compound did not disrupt the histological structure

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MURAV'YEV, N. N., Oligomera prirobeniya, toksikol. razbitiye i klinika otravl., 1971, pp 216-221.

of the thyroid gland, and in experiments on mice of a low-cancer line the compound did not show blastogenic properties. A considerable role in edema poisoning may be attributed to the effect of CS_2 , which is formed when it decomposes. In contrast to dithiocarbamates, I does not produce ethylenethiourea in the animal organism. P. V. Popov.

USSR

UDC 615.917

MURAV'YEV, N. N.

"Some Data on the Mechanism of the Toxic Effect of Tetrahydrothiadiazines"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Hygiene of the Application and Toxicology of Pesticides and the Clinical Aspects of Poisoning -- collection of works), vyp. 9, Kiev, 1971, pp 216-221 (from RZh-Farmakologiya. Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.815)

Translation: In rats on single injection of editon (I; tetranurothiadiazine) in toxic doses (3,000 mg/kg) the succinatedehydrogenase activity dropped in the liver by 33% and in the kidneys by 20%. The activity of the seruloplasmin in the blood serum dropped by 61%, the quantity of hippuric acid in the urine dropped by 74%. In a chronic experiment in the case of prolonged injection of I in doses of 56 and 14 mg/kg. a drop in the succinatedehydrogenase activity by 41 and 26% and a drop in the seruloplasmin activity by 49 and 36% and a reduction in the synthesis of the hippuric acid by 12-33% were discovered. Single and repeated injections of I did not change the Hb content and the erythrocyte content in the blood. In the rats no changes in the histologic structure of the thyroid gland were noted, and ethylenethiourea was not detected in the tissues. In a dose of 500 mg/kg in mice, on repeated injection of I, no

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MURAV'YEV, N. N., Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl., vyp. 9, Kiev, 1971, pp 216-221

blastomogenic effect was exhibited. It is considered that CS_2 plays a significant role in the toxicodynamics of poisoning with I. CS_2 is formed during the metabolism of I. The role of the products of metabolism of the pesticides in the mechanism of their toxic effect is emphasized.

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UDC 632.95.024.391

MURAV'YEV, N. N., VNIICINTOKA, Kiev

"A Toxicological and Hygienic Evaluation of Editon"

Moscow, Zashchita Rasteniy, No 1, 1970, p 27

Translation: The VNIICHOZR All-Union Scientific Research Institute of Plant Protection Chemicals has synthesized a new fungicide -- editon (ethylenebis-4, 6-dimethyltetrahydro-1,3,5-thyiazine-2-thion). It has been extensively tested and is recommended against many plant diseases: apple mange, grape mildew, potato and tomato Phytophthora, sugar beet cercospora infection and tobacco peronosporosis. The preparation is not a phytocide, influences plants positively, and increases fruit and vegetable crop yields.

Editon can be included among the low-toxicity fungicides. The LD₅₀ for rats is 5600-125 mg/kg, and for rabbits -- 4500-560 mg/kg. It is not resorbed through the skin and is not a local irritant. The cumulative properties of the preparation are not pronounced: the cumulation coefficient with a daily injection into rats of one-tenth of the LD₅₀ equals 6.6. Special calculations
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USSR

MURAV'YEV, N. N., et al., Moscow, Zashchita Rasteniy, No 1, 1970, p 27

have shown that the daily permissible dose of the preparation for man is 5 mg. The permissible edicon concentration in foodstuffs is approximately 1 mg/kg.

Residual amounts of the preparation in fruit and vegetables depend on the number and frequency of treatments, the concentration of the suspension, and the time since application. Thus, potato tubers whose tops were sprayed with a 0.6% suspension (500 liters/hectare) twice (on 2 and 22 August, 1968, at the Perv' Kommunisticheskii Kolkhoz, Minsk Rayon) contained no edicon residues. The harvest took place two weeks after the second treatment. An organoleptic study of the tubers disclosed no strange odors or taste. In tomatoes (an experimental plot of the Kolkhoz imeni Frunze, Kiev Oblast) after three sprayings with a 0.4% suspension (on 20 July, 10 and 25 August 1968), the maximum residue two weeks after the last treatment was 1.08 mg/kg. The fruit had no strange odor or taste. When sprayed twice (10 and 25 August) with a 0.2% suspension, the edicon residues were even lower (0.54 mg/kg after seven days).

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MURAV'YEV, N. M., et al., Moscow, Zashchita Rasteniy, No 1, 1970,
p 27

Determination of residual amounts of the preparation in apples was made after the trees were treated three and five times. In the triple-treated fruit (4 and 24 June and 20 July 1968 with a 0.5% suspension at a rate of 1,000 liters/hectare), 21 days after the last treatment the edicon content in the fruit was 0.5 mg/kg, and their organoleptic qualities had not changed. When treatment was conducted peated five times (5 and 19 May, 3 and 22 June and 7 July, 1968) with a 0.5% suspension of edicon (1,000 liters/hectare) 30 days after the last treatment 3 mg/kg of the preparation remained in the apples and there was a strange odor. The distinctive aroma of this apple variety had disappeared. After 50 days, the fruit contained 1.03 mg/kg of the preparation, and the organoleptic properties were normal.

Tests showed that treatment of tomatoes with a 0.4% suspension must stop at least two weeks before the first harvest. In apple trees sprayed three times with a 0.5% suspension, the last treatment is completed three weeks before the first picking. When treatment is repeated five times, the last treatment should end

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MURAV'YEV, N. K., et al., Moscow, Zashchita Rasteniy, No 1, 1970, p 27

seven weeks before picking. Treating potato tops with a 0.6% suspension (500 liters/hectare) can be done two weeks prior to harvesting.

Work with editon presupposes special clothing and respirators. Inasmuch as the preparation rapidly decomposes in the open air, forming carbon disulfide, editon is stored in hermetically-sealed containers in a dry place.

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USSR

KAZNACHEYEV, V. I., MURAV'YEV, N. P.

"Method of Synthesis of Full Checking and Diagnostic Tests for Combination Circuits"

Vychisl Tekhn. v Mashinostr. Nauch.-tekhn. sb. [Computers in Machine Building. Scientific and Technical Collection], June, 1971, pp 183-192 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V636 by Kh. Madatyan).

Translation: The problem is studied of constructing full checking and diagnostic tests for arbitrary combination circuits. The set of all defects such as replacement of constants 0,1 with variables at inputs (outputs) of logic elements in arbitrary combination is considered. The function realized by the properly operating circuit is fixed by the so-called general disjunctive normal form ϕ_0 . Each defect is compared to sum formula ϕ_γ . Of the set of formulas ϕ_γ , the subsets of formulas ϕ_μ and ϕ_ν are separated, characterized by the fact that several letters are replaced with constants 0 or 1. As the authors state, a diagnostic test based on formula ϕ_μ and ϕ_ν is a full diagnostic test.

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UDC 577.4

KAZNACHEYEV, V. I., MURAV'YEV, N. P.

"A Method of Synthesizing Complete Verification and Diagnostic Tests for Combination Circuits"

Vychisl. tekhn. v mashinostr. Nauch.-tekhn. sb. (Computer Technology in Machine Building. Scientific and Technical Collection), 1971, June, pp 183-192 (from RZh-Matematika, No 1, Jan 73, abstract No 1V636 by Kh. Madatyan)

Translation: The paper deals with the problem of constructing complete verifying and diagnostic tests for arbitrary combination circuits. In this connection, account is taken of the set of all failures of the type in which constants 0 and 1 are substituted for the variables at the inputs (outputs) of the logic elements in arbitrary combination. The function realized by the properly operating circuit is given by the so-called general disjunctive normal form ϕ_0 . A subformula ϕ_γ is put into correspondence with each failure. Subsets of formulas ϕ_μ and ϕ_{ν_μ} are isolated from the set of formulas ϕ_γ . These subsets are characterized by the fact that they have some letters replaced by constants 0 and 1 as compared with ϕ_0 . According to the authors, a diagnostic test based on formulas ϕ_μ and ϕ_{ν_μ} is a complete diagnosing test.

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USSR

UDC: 577.4

KAZNACHEYEV, V. I., MURAV'YEV, N. P.

"Construction of a Generalized Logic Model of Automata With Memory"

Vychisl. tekhn. v mashinostr. Nauch.-tekhn. sb. (Computer Technology in Machine Building, Scientific and Technical Collection), 1970, Dec., pp 23-30 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V433)

[No abstract]

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USSR

KAZNACHEYEV, V. I., MURAV'YEV, N. P. and MURAV'YEVA, N. V.

"Analytic Methods of Determination of Full Checking and Diagnostic Tests"

Tr. NII Grazhd. Aviatsin [Works of the Scientific Research Institute for Civil Aviation], 1973, No 83, pp 42-55 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V803)

Translation: A method is suggested for construction of full checking and diagnostic tests for detection and localization of an arbitrary combination of failures in combination systems. A definition is given of the reference formula produced by the properly operating system, the boundary formulas, describing the operation of the system in the case of a defect, and the reference-boundary formulas. All systems are reflected in the general case by two classes of reference formulas -- redundant and nonredundant. The method of synthesis of tests is reduced to determination of the set of nonzero conjunctions of the reference-boundary formulas. Theorems are proven on the completeness of the tests produced. Algorithms and examples of the construction and minimization of tests are presented.

Author's view

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USSR

UDC: 8.74

KAZNACHEYEV, V. I., MURAV'YEV, N. P., MURAV'YEVA, N. V.

"Analytical Methods of Finding Complete Verifying and Diagnostic Tests"

Tr. NII grazhd. aviatsii (Works of the Scientific Research Institute of Civil Aviation), 1973, vyp. 83, pp 42-55 (from RZh-Matematika, No 10, Oct 73, abstract No 10V803 by the authors)

Translation: A method is proposed for constructing complete verifying and diagnostic tests for detecting and localizing an arbitrary combination of malfunctions in compound circuits. The paper defines the reference formula which is realized by the correction circuit, the boundary formulas which describe the operation of the circuit in the case of a malfunction, and reference-boundary formulas. All circuits are represented in the general case by two classes of reference formulas -- redundant and nonredundant. The method of synthesizing tests reduces to finding the set of non-zero conjunctions of reference-boundary formulas. Theorems on the completeness of the resultant tests are proved. Algorithms and examples of construction and minimization of tests are given.

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USSR

UDC 8.74

KAZNACHEYEV, V. I., and ~~MURAV'YEV, N. P.~~

"Modeling of Microelectronic Devices"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Engineering. Collection of Scientific and Technical Works on Microelectronics), 1971, vyp 5(31), pp 101-106 (from RZh-Matematika, No 5, May 72, Abstract No 5V492 from authors' abstract)

Translation: The authors suggest an analytic method of constructing a generalized logical model of microelectronic devices with a memory. The model follows the law for the operation of devices in a serviceable and unserviceable condition and is intended for use in the form of machine programs in systems of automatic design, monitoring, and trouble diagnosis. The model of a serviceable microelectronic device is constructed in the form of an ALGOL program and is realized on the BESM-4.

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USSR

UDC: 8.74

KAZNACHEYEV, V. I., MURAV'YEV, N. P.

"Modeling of Microelectronic Devices"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific and Technical Collection. Microelectronics), 1971, vyp. 5(31), pp 101-106 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V492)

Translation: An analytical method is proposed for constructing a generalized logical model of microelectronic devices with memory. The model reproduces the law of operation of devices in the properly working state and in the malfunctioning state, and is designed for use in the form of computer programs in automatic planning systems which checks and diagnoses malfunctions. A model of a properly operating microelectronic device is compiled in the form of an ALGOL program and realized on the BESM-4. Authors' abstract.

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USSR

UDC 621.791.36.01.669.3:532.696.1:669.14.018.8

NIKITIN, V. M., Candidate of Technical Sciences, and MURAV'YEV, R. S.,
Moscow Aviation Technology Institute imeni K. E. Tsiolkovskiy

"Features of Copper Braze Alloy Spreading on the Surface of Stainless Steel"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 74, pp 10-12.

Abstract: Spreading and interaction of M1 copper, alloys of the Cu-Ag, Cu-Ni-Ag, and Cu-Mn-Ag alloy systems, and braze alloys VPr1, VPr2, VPr4, VPr13, VF417, PM17A, 45A, PSr50, PSr72LMN, and PSr92, with steel SN4 (Kh15N8M2Yu) were investigated. Spreading nature and kinetics were studied for brazing in argon or in a vacuum. It was determined that copper braze alloys spread on the surface of the steel in a continuous layer with microflows into the grain boundaries. The copper concentration and adsorption activity of the molten metal are both increased in the microflows owing to the vaporization of volatile dissolved components and diffusion transition of intermediate compounds, formed with the iron, into the steel. To prevent brittleness, caused by intercrystalline penetration of the braze alloy and to braze thin-wall materials of stainless steel, which are sensitive to the action of copper, it is necessary to use a braze alloy with the ratio of
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USSR

NIKITIN, V. M., Svarochnoye Proizvodstvo, No 2, Feb 74, pp 10-12

Ag/Cu+Ag equal to 72%. Also, it is advantageous to braze in argon rather than in a vacuum, Copper-base braze alloys can be satisfactorily used for brazing steel SN4 only when the entire surface of the part being brazed is coated with the braze alloy. Four figures, eight bibliographic references.

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USSR

UDC 669.017:535.211

GUREVICH, G. L., and MURAV'YEV, V. A., Gor'kiy

"Effect of the Temperature Relationship of the Coefficient of Reflection in Heating Thin Films by Laser Radiation"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 73, pp 26-29

Abstract: The problem of heating thin films by laser radiation was investigated in which the calculation of the temperature fields was made with consideration of the temperature relationship of the reflection coefficient $R(T)$. It was shown that this circumstance leads to a lowering of threshold densities of radiation capacity by $A(T_k)/A(T_0)$ times, where $A = 1 - R$ is the absorptivity of the film, T_k is the failure temperature, and T_0 is the initial temperature. Conditions are mathematically formulated for which the computation of the relationship of R to T becomes trivial. Four bibliographic references.

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USSR

UDC 534.833.524.546.3

ZLOBINSKIY, B. M., and MURAV'YEV, V. A., Moscow Institute of Steel and Alloys

"Sonic Projection of Metals"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74,
pp 56-57

Abstract: The effect of physical and mechanical properties on sonic projection of a number of pure metals and alloys was studied. Data are presented for sonic pressure, modulus of elasticity, damping rate, vibration amplitude, and interatomic distances of metals Al, Ni, V, Ta, Nb, Fe, Ti, Zr, Co, and Cu and alloys Ti-Zr, Nb-Ta and Fe-C-Si with particular attention given to Fe-C-Si alloys with a perlitic or ferritic base. Variations in the sonic properties of the alloys showed that these variations are a function of the type of solid solutions or chemical compounds formed in the alloys. It was shown that in most cases sonic pressure is directly proportional to interatomic distance while the relationship of modulus of elasticity to interatomic distance is sporadic. Three figures, two tables, two bibliographic references.

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Computers: Equipment

USSR

UDC: 658.562.012.7

KHITROVSKIY, Ye. I., TURKINA, T. I., LEBEDEV, L. I., MURAV'YEV, V. A.

"A Device for Gathering and Processing Statistical Data"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzys, Tovarnyye Znaki,
No 31, 1970, Soviet Patent No 253689, Class 42, Filed 20 May 69, p 139

Abstract: This Author's Certificate introduces a device for gathering and processing statistical data on the course of a technological process. The device contains a buffer memory and units for normalizing, comparison, storage, control and synchronization, program setting, program processing, signaling, display, and registration. As a distinguishing feature of the patent, the effectiveness of analysis is improved and the technological process is simplified by connecting the output of the comparison unit to the input of the program setting unit, and connecting one input of the signaling unit to the output of the program processing unit, while the other input is connected to the output of the program setting unit.

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USSR

UDC: 621.039.5/68:004.6

YURCHENKO, Yu. F., MURAV'YEV, V. F., PYATUNIN, B. A., and MALYAVIN, B. G.

"Choice of Metal-Cutting Methods in Reactor Repair"

Moscow, Atomnaya energiya, No 6, 1973, pp 427-434

Abstract: Because of the radiation hazard in repairing reactors, there is a great deal of interest in finding and developing methods of cutting metals safely and remotely in air or under water. These methods are discussed in the present article. Mechanical or plasma methods of cutting are usually employed; the former, however, involve equipment difficult to design and construct, and are usually designed for individual operations; the latter plasma methods are limited by the thickness of the metals to be cut. It has been established that the most acceptable method for reactor repair under specific conditions is the electrical contact method since it can be done with relatively inexpensive material requiring low power levels for operation. This system is explained and various examples of its applications given.

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USSR

UDC 51.621.391

MURAV'YEV, V. I.

"A Method of Sequential Improvement with a Basis of Variable Dimension for a Linear Programming Problem"

V sb. Issled. operatsiy i stat. modelir. (Operations Research and Statistical Modeling--collection of works), First Edition, Leningrad, Leningrad University, 1972, pp 119 - 126, (from RZh Matematika, No 11, Nov 73, abstract 11 V616)

Translation: To solve a linear programming problem it is possible to use inequalities, not reducing them to equations by introducing supplementary variables. This leads to the necessity of working with basic matrices of variable dimension. Formulas are given for the recurrent scaling of the inverse matrix in various situations occurring in the sequential plan improvement method.

Abstract by F. L.

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USSR

Titanium

UDC: 669.295:621.785.062.5

MURAV'YEV, V. I., and GOVOROV, A. A.

"Nitriding Titanium Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 6, 1973, pp 72-74

Abstract: The authors study boundary conditions during the nitriding of titanium alloys in a rarefied nitrogen medium. The specimens used were made from the VT14, VT6-S, VT3-1, and OT4-1 industrial grades of alloys. The specimens were ground, degreased in acetone and pickled in a reagent with the following composition: 20 vol. by percent HNO_3 , 1-3 vol. by percent HF, 77-79 vol. by percent H_2O . The pickling operation lasted for 2-3 minutes. To achieve saturation, sealed tubes filled with nitrogen were used which were made from the Kh18N9T and 20 grades of steel. The changes in tube pressure were registered on the OBMV1-100 GOST 8625-65 vacuum manometer. Residual pressure was measured with the aid of the VIT-1A ionization thermocouple type vacuum manometer. One end of the tube was hermetically sealed to the measurement equipment. The gas volume of the measurement system was taken into consideration. During saturation, pressure changes in the tube were controlled with respect to holding time, temperature, and the value of the tube volume to saturated specimen surface ratio. The results show that nitriding at pressures from 300 to 10^{-2} mm Hg with the nitrogen shut off and holding at decreased pres-

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USSR

MURAV'YEV, V. I., et al, Metallovedeniye, No 6, 1973, pp 72-74

sure is optimal for obtaining a layer of significant depth with satisfactory mechanical properties of the basic metal.

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USSR

UDC 621.785.533:669.14.018.252.3

MURAV'YEV, V. I., and GOVOROV, A. A.

"Low-Temperature Cyaniding of High-Speed Steels"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1970, pp 42-43

Abstract: Cyaniding of tools from high-speed steels was performed on a semi-industrial unit using either the charcoal carburizer (GOST 2407-51) or "BAU" charcoal (GOST 6217-52). After 100 hours of service, the depth of the layer, its hardness, and brittleness (under constant cyaniding specifications) remained unchanged. An increase in the contact area of ammonia with the surface of the coal particles somewhat increased the depth of the layer but only slightly decreased its hardness (from HV 1197 to 1171-1145) and brittleness (from 0.09 to 0.03 mm). The effect of the position of the charcoal layer with respect to the specimens was also studied. The experiment involved specimens of R18 steel placed either directly in the charcoal or above it. The results showed that direct placement of the parts in the charcoal increases the depth of the cyanided layer by about 100%. Another experiment involved reamers and drills from R18M steel placed in the charcoal. The holding time was cut in half. The

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USSR

MURAV'YEV, V. I., and GOVOROV, A. A., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1970, pp 42-43

tools were found to have the same wear resistance as those treated by passing ammonia through charcoal in a separate compartment. It is concluded that the cyaniding intensity of tools from high-speed steels in the presence of charcoal is about the same as with the use of carburizing gases of different activity together with ammonia. Direct contact of the tool, ammonia, and charcoal accelerates cyanidation 1.5-2 times as compared to a separate arrangement of coal and tools.

2/2

1/3 : 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ISLAND AND LINE GRANULARITY DIFFERENCES IN AK4 1 ALLOY FORGINGS -U-
AUTHOR--(03)-MURAVYEV, V.I., GORBUNOV, N.N., NOVIKOV, G.N. *M*
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, KUZNECHNO-SHTAMPOVOCHNOYE PROIZVODSTVO, NO. 2, 1970, PP
8-10
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MECHANICAL PROPERTY, ALUMINUM ALLOY, MECHANICAL STRENGTH,
CHEMICAL COMPOSITION, CRYSTALLIZATION, METAL FORGING, METAL
CRACKING/(U)AK6 ALLOY, (U)AK4.1 ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0260

STEP NO--UR/0182/70/000/002/0008/0010

CIRC ACCESSION NO--AP0100772

UNCLASSIFIED

2/3 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100772

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GRANULARITY PHENOMENA OF THE TITLE, ILLUSTRATED IN A PHOTOGRAPH, ARE INVESTIGATED IN THIS PAPER. THESE DIFFERENCES ARE IMPORTANT BECAUSE THEY REDUCE THE MECHANICAL STRENGTH AND REFRACTORINESS OF THE ALLOY MENTIONED IN THE TITLE, AND THE BOUNDARIES BETWEEN SMALL AND LARGE GRAINED ZONES CAUSE DEGENERATION OF THE METAL BY CRACKING. IT IS STATED THAT LARGE GRAINS IN ALUMINUM ALLOYS MAY ARISE IN RECRYSTALLIZATION AS A RESULT OF NONHOMOGENEITIES IN THE CHEMICAL COMPOSITION, AS IN THE AKG ALLOY AS WELL AS THE CRITICAL DEFORMATION DEGREE, AS IN THE AK4-1 ALLOY. THE EXPERIMENTS DESCRIBED WERE DONE WITH RODS 75 AND 80 MM IN DIAMETER MADE OF AK4-1 OF VARIOUS MELTS. IN THEIR ORIGINAL STATES, THE GRAINS IN THE RODS WERE SMALL AND UNIFORM; AFTER TEMPERING AND AGING OF THE RODS, THE GRAINS IN THE 80 MM SPECIMEN REMAINED SMALL AND UNIFORM WHILE THOSE OF THE 75 MM ROD SHOWED DIFFERENCES. SPECIMENS 20 MM THICK WERE USED TO INVESTIGATE THE EFFECT OF THE DEGREE OF DEFORMATION AND TEMPERATURE UNDER STAMPING. AFTER HEATING TO 350, 450, AND 530 DEGREES C AND SUBSEQUENT COOLING IN WATER AND AIR, THE AVERAGE DEGREE OF DEFORMATION WAS FROM 4 TO 37 PERCENT AND THE TRUE DEGREE OF DEFORMATION FROM 0 TO 85 PERCENT, THE LATTER FIGURE BEING DETERMINED BY THE METHOD OF I. M. PAVLOV (ARTICLE IN METALLURG, 1936, NO. 7). ALL SPECIMENS REGARDLESS OF THE TEMPERATURE TO WHICH THEY WERE HEATED SHOWED GRANULAR DIFFERENCES DEPENDING ON THE DEGREE OF DEFORMATION. A TABLE OF THE MECHANICAL QUALITIES OF THE ALLOY FOR VARIOUS TYPES OF MACROSTRUCTURE IS GIVEN.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

3/3 025

CIRC ACCESSION NO--AP0100772

ABSTRACT/EXTRACT--THE AUTHORS DRAW TWO CONCLUSIONS: THAT THE APPEARANCE OF GRANULAR DIFFERENCES IN AK4-1 FORGINGS IS CONNECTED WITH THE RECRYSTALLIZATION OF PORTIONS WITH A CRITICAL DEGREE OF DEFORMATION, AND THAT STAMPING FOR ONE TRANSITION IS THE MOST EFFECTIVE METHOD FOR ELIMINATING GRANULAR DIFFERENCES AND IMPROVING THE MECHANICAL QUALITY, RELIABILITY, AND LIFE OF MACHINE PARTS.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--RAPID HEATING AND COOLING OF ALUMINUM ALLOYS IN A FLUIDIZED BED -U-
AUTHOR--(02)-KURBATOV, V.P., MURAVYEV, V.I. M
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 66-8
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM ALLOY, FLUIDIZED BED, ALLOY DESIGNATION, METAL
HEATING, METAL COOLING/(U)ETA6 FURNACE, (U)AK41 ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1233

STEP NO--UR/0129/70/000/002/0066/0068

CIRC ACCESSION NO--AP0106064

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NJ--AP0106064

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 30-100 (CROSS SECTION) TIMES 150 MM SPECIMENS OF THE AK41 ALLOY WERE HEATED AND COOLED IN THE FLUIDIZED BED OF POWD. ALUXITE (GRAIN SIZE 0.12-0.16 MM) IN A PLANT PROVIDED WITH AUTOMATIC TEMP. REGULATION. THE RESULTS SHOWED THAT THE TIME OF HEATING OF THE CENTER OF A SPECIMENT AT 480DEGREES (5-SIMILAR TO 18 MIN FOR 30-100 MM DIAM.) WAS ONE TENTH-ONE NINTH THAT IN THE ETA6 FURNACE (55-175 MIN) AND TIME OF THEIR COOLING TO ROOM TEMP. WAS 12 MIN COMPARED TO 1.5 AND 160 MIN FOR THE COOLING IN WATER AND IN AIR, RESP. THE STD. MECH. TESTS DID NOT SHOW ANY DEFORMATION OF ALLOYS COOLED IN THE FLUIDIZED BED. THE TECH. CHARACTERISTICS OF THE PLANT USED AND THE RESULTS OBTAINED ARE GIVEN.

UNCLASSIFIED

USSR UDC 619:616.9-022+636.1+636.2+636.4+636.52/.58

MURAVYEV, V. K.; KHUKHOROV, V. M.; SHORSHNEV, V. I.; PRONINA, N. A.; SMIRNOV, V. I.; ONUFRIYEV, V. P.

"Immunological Reactivity of Cattle Treated With Saponin Foot-and-Mouth Disease Vaccine at Different Ages"

Vladimir, V sb. Yashchur (Foot-and-Mouth Disease -- Collection of Works), 1970, pp 74-75 (from RZh-58. Zhivotnovodstvo i Veterinariya, No 4, Apr 71, Abstract No 4.58.574, by E. Sorvachev)

Translation: The dynamics of formation of virus-neutralizing antibodies (VNA) was studied in cattle aged 1-, 3-, 6-, and 12-months and older, 7, 14, 21, 30, 60, and 90 days after vaccination with aluminum hydroxide vaccine -- a formol vaccine from lapinized A₂₂ virus of foot-and-mouth disease with various doses of saponin. Animals of each age group were vaccinated with 10 DV₅₀ in doses of 4.3 ml (the immunizing dose was determined on guinea pigs), containing saponin in amounts of 2.5, 5, and 10 mg. The VNA titers in the sera of animals were determined on baby mice given 10³ LD₅₀ of the virus. It was found that

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USSR

MURAVYEV, V. K., et al, V sb. Yashchur, 1970, pp 74-75

administration of the vaccine with a saponin dose of 5 and 10 mg to 1-month and 3-month-old calves led to a more significant increase in the VNA titer than in 12-month-old bull calves and adult animals. The local reaction to the introduction of saponin-containing aluminum hydroxide vaccine was less pronounced in calves than in adult animals.

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USSR UDC 619.611.9-022.6+636.1+636.2+636.4+636.52/.58

ONUFRIYEV, V. P.; DUDNIKOV, A. I.; ~~MURAVYEV, V. K.~~; SHVETSOV, Yu. F.; CHUNAYEV, Yu. V.; KRAVCHENKO, V. M.; ZAKHAROV, V. M.; PRONIN, I. A.; NIKITIN, A. Y.

"Diatelic Immunization of Cows with Foot-and-Mouth Disease and Prospects for Obtaining Immune Milk"

Vladimir, V sb. Yashchur. T. 1 (Foot-and-Mouth Disease, Vol 1 -- Collection of Works), 1970, pp 160-172 (from RZh-58. Zhivotno-vodstvo i Veterinariya, No 4, Apr 71, Abstract No 4.58.573)

Translation: Diatelic immunization of cows with foot-and-mouth disease antibodies provides lactoserum and immunolactone with a high concentration of foot-and-mouth disease antibodies. The foot-and-mouth disease immunolactone has pronounced preventive properties in research with baby mice, guinea pigs, bull calves, and suckling pigs. Polyvalent foot-and-mouth disease immunolactone has a more pronounced virus-neutralizing activity with respect to heterologous strains of foot-and-mouth disease virus

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USSR

ONUFRIYEV, V. P., et al, V sb. Yashchur. T. 1, 1970, pp 160-172

than the monovalent one. The high specific activity of the foot-and-mouth disease lactone, obtained under biological production conditions by immunization of cows with inactivated foot-and-mouth disease virus, indicates a promising use of the diatelic immunization method under industrial conditions.

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USSR

UDC 619:616.988.43-07:636.22/.28

KHUKHOROV, V. M., ZUBOV, I. V., MURAV'YEV, V. K., ONUFRIYEV, V. P., PRONINA, N. A., SMIRNOV, V. I., and FILATOV, I. P., All-Union Scientific Research Institute of Foot-and-Mouth Disease

"Course of Foot-and-Mouth Disease in Areas in Which Mass Immunization Had Been Carried Out"

Moscow, Veterinariya, No 1, Jan 73, pp 50-51

Abstract: Studies carried out at foot-and-mouth disease epizootic foci at which specific prophylaxis of cattle (immunization with inactivated aluminum hydroxide formol vaccine containing saponin) had been applied on a mass scale indicated the occurrence of atypical infections in cases in which the virus of the disease had been brought in later. Virus carriers were detected among immunized animals that did not exhibit clinical symptoms of the disease, but had been in contact with sick animals, and also among animals that had recovered from the disease.

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USSR

UDC: 621.396.6.017.72(088.8)

VORONIN, G. I., KUZNETSOV, I. D., MITROKHIN, V. M., MURAV'YEV, V. P.,
ZAKHAROV, V. S.

"A Device for Cooling Radio Electronic Equipment"

USSR Author's Certificate No 268440, filed 18 Oct 68, published 21 Aug 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V292 P)

Translation: A device is proposed for cooling electronic radio equipment. The device contains a closed loop filled with a coolant such as polymethyl siloxane. Connected in series in the loop are a pump and an air-liquid radiator with air collector. To improve the operating efficiency of the device, an evaporator is placed in series with the radiator and connected by tubing through a solenoid valve to a coolant-filled vessel. The evaporator is equipped with an ejector pump which is connected to a compressor through an air line with remote-control valve. Connected in the main air line of the air collector is a second remote-control valve. The control windings of the solenoid valve and the remote-control valves are connected to a control module which is connected in turn to temperature pickups in the closed loop and the air collector.

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2470

242963 DELAY LINE FOR THE VOCALIZER, HARMONIC SYNTHESIZER.

The generator of the principal tone (1) is connected to coincidence device (2), its output feeding blocking generator (3) and first cell of the pulse shift register (4). Also to the point is connected coincidence circuit (5). To one of its inputs is connected a noise generator (6), which feeds its noise through low pass filter (7), limiter (8) and differentiating circuit (9). The other input of (5) is connected to the inverter (10) "tone-noise". Blocking generator (3) is connected to the shift register, which has (4), (11), (12) and (13) cells. Last one is connected to the second shift register which has (14), (16), (17) and (18) cells and blocking generator (15).

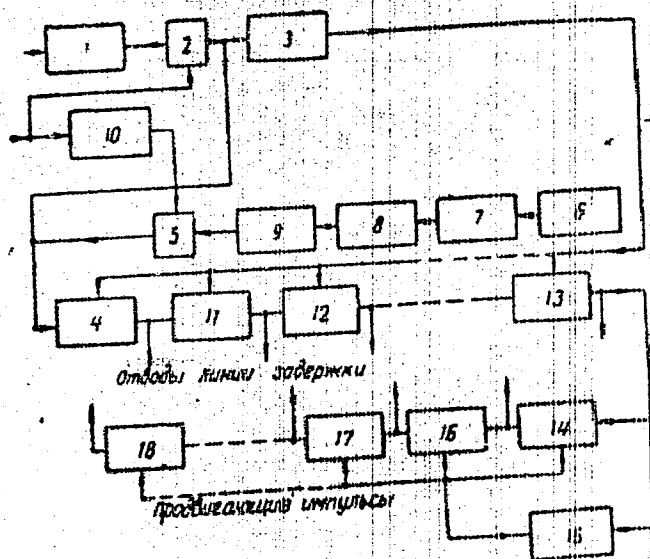
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USSR

UDC 538.4:621.362

KUZNETSOVA, T. D., LEVITAN, Yu. S., MURAV'YEV, Ye. V., PANEVIN, I. G.

"Laminar Magnetohydrodynamic Boundary Layer on a Current-Conducting Surface in the Presence of Lateral Velocity Components and Bulk Retardation Forces"

Magnitnaya Gidrodinamika (Magnetohydrodynamics), No 4, 1971, pp 36-42

Abstract: A study is made of stationary laminar flow of an incompressible liquid with constant electroconductivity and viscosity in a cylindrical coaxial channel with solid electrodes located in an external magnetic field that has both tangential and longitudinal components. The Hall constant and the magnetic Reynolds number are small. Due to axial symmetry, the electric field vector has only longitudinal and transverse components. Using Ohm's law and continuity, impulse, and Maxwell's equations for the external electrical and magnetic fields, the authors show that in a given axial plane the flow is dependent on the varying lateral velocity component, inasmuch as the radial pressure gradient varies along the length of the channel. Also, the longitudinal

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USSR

KUZNETSOVA, T. D. et al, Magnitnaya Gidrodinamika, No 4, 1971,
pp 36-42

dinal gradient varies across the channel radius. Under given conditions a meridian vortex develops with a zone of reverse flow near the central electrode. Radial variations in the tangential magnetic field and radial current flux also affect the flow.

The development of a boundary layer in the coaxial channel with rotating flow is simplified to the consideration of a flow in a plane slit-type channel with a lateral velocity component. Assuming a short channel and a large Reynolds number, the authors reduce the problem to a boundary layer approximation, which permits calculation of the flow parameters in the center and in the boundary layer. Fluid injection through the walls is assumed to be weak, and only lateral velocity interaction with the longitudinal magnetic field is treated. The assumptions and simplifications yield simple equations for the laminar boundary layer that describe the skewed flow of the electroconductive liquid on a current-carrying plate.

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USSR

KUZNETSOVA, T. D. et al, Magnitnaya Gidrodinamika, No 4, 1971,
pp 36-42

Self-similar transformations and automodeling techniques fail to hold for fluid injection through the wall, and consequently the Runge-Kutta method is used, with numerical calculation carried out on a BESM-2M digital computer. Results are shown in graphic form by families of curves for the lateral velocity profile. The similarity to flows with retardation is noted. The difference is that when the transverse velocity gradient reaches zero, the main flow separates from the wall and reverse flow is observed, but the longitudinal velocity profile is not affected. Flow retardation and separation from the wall are found to be functions of transpiration rate.

The authors thank A. V. Gubarev for valuable discussions. Orig. art. has 8 figs. and 8 refs.

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USSR

UDC 621.396.67.001.5

BELDOVSKIY, V. A., VINOGRADOV, B. A., VAN'KIN, A. S., ZVEREV, S. B.,
BUTKEVICH, A. O., MURAV'YEV, Yu. K.

"A Method of Plotting the Radiation Patterns of Antennas"

USSR Author's Certificate No 284070, filed 10 Apr 69, published 4 Jan 71
(from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B112 P)

Translation: The proposed method enables automatic recording of a radiation pattern in 10-20 s on a CRT with image persistence and photographing in case of necessity. The antenna to be studied is mounted on a rotating platform and used as a receiving antenna. The emf from the antenna is sent to the receiver with linear amplification of the range to be studied. The output voltage of the receiver is sent through a current collector to the input of a discrete conversion module which generates a sequence of pulses which are delayed with respect to the trigger pulse. This pulse train is then sent to the electrode of a CRT with circular scan. Scanning of the CRT is triggered by pulses with a prf which ensures the accuracy required in reproduction of the radiation pattern. When the scan

1/2

- 4 -

USSR

BELDOVSKIY, V. A., et al., USSR Author's Certificate No 284070, filed 10 Apr 69, published 4 Jan 71 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B112 P)

rotation is synchronized with antenna rotation by means of a primary pickup circuit and an amplifier for the signal from the drive tracking system, the radiation pattern is reproduced on the screen of the CRT with a high accuracy determined by the linearity of the image stages. A calibrated mark unit shapes marking pulses for every five degrees of rotation of the antenna, and for controllable intervals with respect to field strength. The method appreciably simplifies the process of taking the radiation patterns of antennas; it can be used in synthesizing an antenna, and also in determining the optimum arrangement of transmitting and reception units for zones with a minimum noise level. Two illustrations.

A. K.

Alkaloids

USSR

UDC 615.322.547.94/.074

BUI-TI-YU and MURAV'YEVA, D. A., Pyatigorsk Pharmaceutical Institute,
Pyatigorsk

"Isolation and Study of the Alkaloids of *Argemone mexicana* L. Growing in
Vietnam"

Moscow, Farmatsiya, Vol 22, No 4, Jul-Aug 73, pp 32-34

Abstract: A study was made of the alkaloids of *Argemone mexicana* L. collected at the end of the period of flowering of the plant in the vicinity of Hanoi. The total content of alkaloids, which were extracted with dichloroethane from the dry plant material that had been made alkaline, was 0.28% in the herb (the external part of the plant) and 0.42% in the roots. Chromatographic separation indicated that six alkaloids were present in the plant. Four of them were identified as protopine, allocryptopine, heleritrine, and sanguinarine, while two of them could not be identified. Spectrophotometric determinations carried out in the UV range indicated that one of the two principal alkaloids, protopine, was present in the amounts of 21 and 18% with reference to the total amount of alkaloids in the herb and roots, respectively, while the other, allocryptopine was present in the amounts of 37 and 36% with reference to the total amount of alkaloids in the herb and roots, respectively. 1/1

USSR

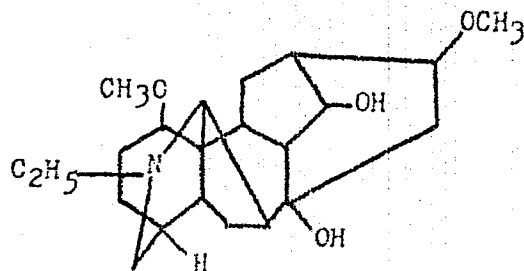
UDC 547.944/945

MURAV'YEVA, D. A., PLEKHANOVA, T. I., and YUNUSOV, M. S., Pyatigorsk
Pharmaceutical Institute of the Order of Labor Red Banner Institute of
Chemistry of Natural Products, Academy of Sciences UzSSR

"Novel Diterpene Alkaloid From Aconitum Nasutum"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1972, pp 128-129

Abstract: A new alkaloid was isolated from Aconitum nasutum Fisch et Rechb., which the authors named aconasine. Its melting point is 148° , it is soluble in methanol, chloroform, slightly soluble in benzene, acetic anhydride and acetone, and insoluble in ether and hexane. The following structure has been assigned to this alkaloid:



1/1

USSR

UDC 613.5:628.8(98)

MURAV'YEVA, G. I., and YEVIAMPIYEVA, M. N., Institute of General and Communal Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR; Central Institute of Advanced Training for Physicians, Moscow

"Differential Parameters of the Microclimate for Living Areas in the Far North"

Moscow, Gigiyena i Sanitariya, No 1, Jan 71, pp 20-23

Abstract: Tests were conducted in an aerodynamic cold chamber on healthy subjects 19-30 yrs old to determine permissible conditions that must exist in living areas in the Far North. The temperature in the chamber was varied from minus 15 to minus 19°C and the velocity of air in it from 0 to 4.5 m/sec. The clothing and activities of the subjects were varied to imitate those under actual conditions. The skin temperature, heat production, and the intensity of body thermoregulation were determined. Furthermore, the degree of comfort of the subjects was established. On the basis of the results obtained, the wind velocity at temperatures down to minus 20°C should not exceed 3 m/sec in outdoor areas destined for rest (slow walking), while it may be as high as 4-4.5 m/sec at the same temperatures in outdoor areas for games and physical training. In tests conducted at 3-15°C, it was established that the temperature in covered, heated passages between inhabited buildings should not be lower than 12-15°C.

1/1

USSR

UDC 546.45:543.27:543.544.25

DRUGOV, Yu. S., MURAV'YEVA, G. V., GRINBERG, K. M., NESTERENKO, G. N.,
SOKOLOV, D. N.

"Gas Chromatographic Method of Determination of Beryllium in Air"

Moscow, Zavodskaya Laboratoriya, No 11, 1972, pp 1305-1306.

Abstract: The authors have developed a gas chromatographic method for determination of microquantities of beryllium in the air at industrial enterprises, based on the formation of a volatile beryllium chelate with trifluoroacetyl acetone. A linear dependence of the signal of the detector on beryllium content is observed in the range of concentrations of 0.4 to $2 \cdot 10^{-5}$ mg/ml Be. The sensitivity of the determination is $1 \cdot 10^{-5}$ mg/ml Be.

1/1

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USSR

UDC 911.3:61

MURAV'YEVA, K. A.

"Medical and Climatological Studies and Their Prospects in Polar Regions"

Leningrad, Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva, Vol 103, No 3, May/Jun 71, pp 234-239

Abstract: Medical climatology is that part of medical geography which studies the effect of the surrounding air, the meteorological factors, the weather, and the climate on the physiological functions of man, his health, and character and success of medical treatment. This article presents a general and a literature survey of various positive and negative effects of the climate on man, including the effect of artificially created microclimates. Two medical-climatic links are distinguished: 1) those intimately linked to physiology, for instance diseases due to climatological conditions, and 2) those not having such a cause, for instance "statistical meteorotropism," according to which there is only a statistical correlation between the weather and a physiological phenomenon. Studies in this field can be grouped into two classes: 1) determination and measurement of meteorological parameters of the atmosphere, which affect man's body and 2) a systematic study of the mechanism by which the body reacts to these parameters which may affect it individually or collectively. A table is presented which lists physiologically effective atmospheric factors, 1/2

USSR

MURAV'YEVA, K. A., Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva, Vol 103, No 3, May/Jun 71, pp 234-239

such as qualitative composition of the air, solar radiation, and atmospheric electricity. Several scientific methods exist for study of the effect of meteorological factors on man: 1) the medicogeographic method, consisting of a comparison and analysis of maps showing the distribution of disease incidence in a territory, 2) the indirect medicometeorological method describing medical facts as linked to atmospheric parameters such as local winds, air masses, fronts, or linked to specific types of weather; the setting up and analysis of bioclimograms; 3) the experimental method uses climatologically controlled conditions (chambers) and studies measurable changes in the human body; 4) the statistical method used for confirmation of some of the conclusions arrived at by the other methods. This method is used to discover a correlation between meteorological factors or types of weather or climate and the state of man's body. Various indexes have been devised for these type of studies. Unfortunately, much research remains to be done in the polar regions, including solution of the following problems: collecting exhaustive data on meteorological and climatic factors affecting the human body; determination of correlations between these factors and the physiological reactions and the disease incidence of man; applying already established indexes to polar conditions; establishing the role of the weather and climate on the acclimatization process.

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MURAV'YEVA, K.K.

JPKS 59208
6-73

V-12. EPITAXIAL FILMS OF CHALCOGENIDE COMPOUNDS OF CADMIUM IN A QUASI-CLOSED SPACE

Article by Yu. K. Ispovskiy, I. P. Kozlovskiy, K. K. Murav'yeva, V. B. Alekseyevskiy, Leningrad, Novosibirsk, Ill. Sibirskiy po Protektsii Kozm. i Strukt. Poluprovodnikov Khim. Kriy. i Plazm., Russian, 12-17 June, 1972, p. 63.

A study was made of the epitaxial growth of sulfide, selenide and telluride compounds of cadmium on mica macrovials by condensation from the gas phase in a quasi-closed space in the temperature range of $T_0 = 30-700^\circ\text{C}$. $T_{\text{true}} = 400-750^\circ\text{C}$.

1. The film morphology and structure, the phase composition of the films as a function of T_0 and T_{true} were investigated. The growth regions of the cubic, hexagonal and mixed (cubic plus hexagonal) monocrystalline films were investigated. It was demonstrated that in the quasi-closed volume it is possible to synthesize epitaxial films at low substrate temperatures. Under conditions close to thermodynamic equilibrium, films grow the electrochemical properties of which are close to the properties of single crystals.

2. The dependence of the growth rate (ω) of the epitaxial films on T_0 : $\lg \omega = f(T_0)$ for $T_{\text{true}} = \text{const}$ is of a complex nature and is satisfactorily explained beginning with the theory of the growth kinetics of semiconductor films developed by L. N. Aleksandrov.

3. The proposed method of synthesizing the films permitted quantitative tracing of the effect of the excess pressure of each of the gas phase components (cadmium, sulfur, selenium, tellurium) on the epitaxy of the cadmium chalcogenide films. A study was made of the interaction between a) $\lg \omega = f(T_0)$ (for $T_0 = \text{const}$, $T_{\text{true}} = \text{const}$) and the gas phase composition; b) the gas phase composition and the film morphology.

MURAV'YEVA, K.K.

JPRS 69268
6-73

STAGE OF THE INITIAL STAGES OF EPITAXIAL GROWTH FILMS OF CASHLICH
SCIENTIFIC ON NICA

Article by A. I. Dzhilova, I. P. Kalinkin, K. K. Murav'yeva, V. R. Alekseyev, L. S. Al'tamirov, Leningrad, Novosibirsk, Novosibirsk, Ill Simposium Po Fiziku i Khimii Polimerov, 1973, Vol. 1, No. 1, p. 12-17, 1973, p. 221.

An electron microscope study was made of the nucleation and growth of epitaxial CdTe films on mica (substrate) in a vacuum of $5 \cdot 10^{-3}$ torr at $T_g = 250-270^\circ \text{C}$ and $T_{\text{test}} = 700-1,000^\circ \text{C}$. The results of a survey of the electron microscope pictures presented in the form of graphical relations permitted the growth kinetics to be traced and the series of laws of the epitaxial growth process of CdTe films on mica to be established.

a) In the nucleation stage on the substrate, two types of particles are observed: small particles with irregular faceting (the cubic phase) and larger uniaxial particles.

b) The maximum density of the nuclei of two types is determined by the thermodynamic conditions of synthesis (T_g , T_{test} , the degree of deviation from the equilibrium state inside the evaporator). The knowledge of the maximum particle density of both types under different conditions of growth permitted estimation of the activation energy of the nucleation, absorption and diffusion.

c) The nature of the variation in altitude and transverse dimensions of the particles with time permitted establishment of the predominant effect of the surface diffusion during the growth process.

d) The growth rate in individual stages is not a constant and increases by a power law.

e) The filling coefficients for each type of particle as a function of the condensation time permitted establishment that the phase composition of the continuous film is determined by the ratio of the areas occupied by particles of each type directly before coalescence which, in turn, is determined by the synthesis thermodynamics.

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--GROWTH AND STRUCTURE OF MONOKRISTALLINE FILMS OF A PRIMEII B
PRIMEVI COMPOUNDS -U-
AUTHOR--(05)-KALINKIN, I.P., MURAVYEVA, K.K., SERGEYEW, L.A., ALESKOWSKY,
V.B., BOGOMOLOV, N.S.
COUNTRY OF INFO--USSR

SOURCE--KRISTALL UND TECHNIK, 1970, VOL 5, NR 1, PP 51-59

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SINGLE CRYSTAL FILM, SELENIDE, TELLURIDE, ZINC COMPOUND,
CADMIUM SULFIDE, GERMANIUM, GALLIUM ARSENIDE, CHALCOGENIDE GLASS,
EPITAXIAL GROWTH, SURFACE FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0417

STEP NO--GE/0109/70/005/001/0051/0059

CIRC ACCESSION NO--AP0121091

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121091

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN VACUUM 10 PRIME NEGATIVE4-10 PRIME NEGATIVES TORR MONOCRYSTALLINE THIN LAYERS OF CDS, CDSE, CDTE, ZNS, ZNSE, ZNTE WERE PREPARED ON MICA, (111) SURFACES OF GERMANIUM AND GALLIUM ARSENIDE SINGLE CRYSTALS AND (0001) AND 1120) CADMIUM SULPHIDE SURFACES. THE FILM STRUCTURES AND SOME OF THEIR PROPERTIES (CONDUCTIVITY, N OR P MOBILITIES) WERE SHOWN TO DEPEND ON TEMPERATURE CONDITIONS OF FILM PREPARATION. IT WAS SHOWN EXPERIMENTALLY THAT IN THE CASE OF MONOCRYSTALLINE THIN FILMS OF ZINC AND CADMIUM CHALCOGENIDES THERE IS A CORRELATION BETWEEN EVAPORATION AND EPITAXY TEMPERATURES OF FILM PREPARATION. STRUCTURE AND PHASE COMPOSITION OF MONOCRYSTALLINE LAYERS ARE CONNECTED WITH THE NATURE OF SUBSTRATE SUBSTANCES USED (INCLUDING POLARITY OF (111) DIRECTION IN GALLIUM ARSENIDE AND (0001) DIRECTION IN CADMIUM SULPHIDE). FACILITY: INSTITUTE OF TECHNOLOGY LENSOVIETA, LENINGRAD.

UNCLASSIFIED

USSR

UDC 546.48'22 + 546.48'23

KALINKIN, I. P., MURAV'YEVA, K. K., YURGEL', I. B., ALESKOVSKIY, V. B.,
and ANIKIN, I. N., Leningrad Technological Institute imeni Lensovet

"Production of Single-Crystal CdS and CdSe Film Under Conditions
Close to Equilibrium"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy,
Vol 6, No 9, Sep 70, pp 1564-1567

Abstract: The article suggests a method for the synthesis of single-crystal CdS and CdSe films using vacuum condensation on orienting substrates (synthetic mica (fluorophlogopite) or leucosapphire) in a wide temperature range (300-800° C) under conditions close to thermodynamic equilibrium. The structure of epitaxial films of CdS and CdSe is no less perfect than single crystals (number of dislocations 10^{-3} - 10^{-5} cm⁻²). A study was made of the effect of process parameters on the degree of structure perfection of the CdS, CdSe epitaxial films and their electrical properties. The suggested method permits the growth of single-crystal CdS and CdSe films with a wide range of properties.

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USSR

KALINKIN, I. P., et al., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 9, Sep 70, pp 1564-1567

Conditions are described for the production of single-crystal CdSe films with a mobility of up to $180 \text{ cm}^2/\text{v. sec.}$, close to the properties of the single crystals. Perfect CdS and CdSe films with a resistivity of up to 10^7 - 10^9 ohms per sec were synthesized. The method of coevaporation with chalcogene gives perfect high-resistance single-crystal CdS and CdSe films with a hole mobility of 0.8 - $2.4 \text{ cm}^2/\text{v. sec.}$

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1/2 030 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--GROWTH AND STRUCTURE OF SINGLE CRYSTAL FILMS OF CADMIUM AND ZINC
CHALCOGENIDES -U-
AUTHOR--(05)--MURAVYEVA, K.K., KALINKIN, I.P., SERGEYEVA, L.A., ALESKOVSKIY,
V.B., BUGOMOLOV, N.S. M
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 434-40
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MICA, CADMIUM, ZINC, SINGLE CRYSTAL FILM, VAPORIZATION,
THERMAL EFFECT, MOLECULAR WEIGHT, SINGLE CRYSTAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1898

STEP NO--UR/0363/70/006/003/0434/0440

CIRC ACCESSION NO--AP0115717

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY CONDENSATION AT 10 PRIME
NEGATIVE4 MINUS 10 PRIME NEGATIVES MM HG, SINGLE CRYSTAL FILMS OF CD AND
ZN CHALCOGENIDES ON MICA (MUSCOVITE), GE (N AND P TYPE), GAAS (N AND P
TYPE), AND CDS WERE STUDIED. AT AN EPITAXIAL TEMP. OF 250-300DEGREES
THERE EXISTS A RELATION BETWEEN THE MOL. WT. OF THE CHALCOGENIDES AND
THE DIFFERENCE BETWEEN THE TEMPS. OF THE VAPORIZER AND THE SUBSTRATE.
THE CONDITIONS OF THE PREPN. OF SINGLE CRYSTAL FILMS DEPEND BUT WEAKLY
ON THE NATURE OF THE INVESTIGATED SUBSTRATES. THE PHASE COMPN. OF THE
FILMS PREPD. DEPENDS ON EPITAXIAL TEMP., CONDENSATION RATE, NATURE OF
THE ORIENTING SUBSTRATES, AND CONSTRUCTION OF THE VAPORIZER.
FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 537.311.33:548.55

M
MURAV'YEVA, K.K., KALINKIN, I.P., SERGEYEVA, L.A., ALESKOVSKIY, V.E., BOGOMOLOV, N.S., Leningrad Technological Institute imeni Lenolet, Leningrad, Ministry of Higher and Secondary Specialized Education RSFSR

"Investigation of Growth and Structure of Single Crystalline Films of Cadmium and Zinc Chalcogenides"

Moscow, Neorganicheskiye Materialy, Vol 6, No 3, 1970, pp 434-440

Abstract: The method of condensation in a vacuum of 10^{-4} - 10^{-5} mm Hg is used to grow single crystalline cadmium and zinc chalcogenide films on mica (muscovite), germanium (n- and p-types), GaAs (n- and -p-types) and CdS. It is demonstrated that with an epitaxial temperature of 250-300°C, there is a dependence between the molecular weight of the chalcogenides and the difference between the temperatures of evaporator and substrate. The single crystalline film production conditions depend little on the nature of the substrates investigated. The phase composition of the films produced depends on the epitaxial temperature, condensation rate, type of orienting substrates and evaporator design. Single crystalline films of CdSe of perfected structure with carrier mobility up to $130 \text{ cm}^2/\text{v-sec}$ were grown in a closed crucible under near-isothermal conditions.

1/1

Acc. Nr.: AP0029427

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp.21-24

MOLECULAR WEIGHT AND THE NUMBER OF IONOGENIC GROUPS OF
RISTOMYCINS AND CLOSE ANTIBIOTICS

Lomakina, N.N.; Murav'yeva, L.I.; Yurina, M.S.

Institute for New Antibiotics, Academy of Medical Sciences of the USSR, Moscow

Potentiometric titration of ristomycins, i. e. ristomycins A and B, ristocetins A and B, actinoidins A and B and vancomycin was performed. It was determined that the molecular weight of ristomycin A and ristocetin A was about 2300, that of ristomycin B, ristocetin B and actinoidins 2000—2100 and that of vancomycin 1600—1700. The ristocetins were found to contain just as ristomycins two primary amino groups. Five titrating phenolic hydroxyls were shown to be present in both ristocetins and ristomycins. Actinoidins and vancomycin contained 4 and 3 phenolic hydroxyls respectively. One of the two amino groups present in vancomycin was primary.

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REEL/FRAE

19681023

USSR

UDC 621.357.7:669.738.7(083.8)

KISELEVA, V. L., and MURAV'YEVA, L. M., Ivanovo Chemical Technology Institute

"The Method of Electrolytic Cadmium Plating"

USSR Author's Certificate No 324302, Filed 17 Nov 69, Published 7 Mar 72 (from Referativnyy Zhurnal -- Khimiya, Svoinyy Tom, No 23(II), 1972, Abstract No 23L251)

Translation: A method of the electrolytic cadmium plating is patented. It differs from other methods by the presence of syntanol DS-10 in it. The latter facilitates the formation of plated layer consisting of small crystals and increases the dispersion quality of electrolyte. The electrolytic plating is conducted at pH 2-3, D_c 0.3-13 a/dm², and 18-25°C, with the electrolyte containing $CdSO_4$ 0.12-0.15, $(NH_4)_2SO_4$ 0.9-0.8, H_3BO_3 0.3-0.4 mole/liter, and syntanol 4.0-8.0 g/liter.

Acc. Nr: **AP0044611** **M**

Ref. Code: **UR0497**

PRIMARY SOURCE: **Klinicheskaya Meditsina**, 1970, Vol 48,
Nr 1, pp **93-96**

**ALTERATIONS OF SOME FUNCTIONAL TESTS OF THE LIVER
IN MECHANICAL JAUNDICE**

Murav'yeva, N. K.; Komogortseva, G. A.

Summary

The authors examined 41 patients with mechanical jaundice, 9 -- with chronic hepatitis after sustained infectious hepatitis and 15 apparently healthy persons (control group). Data were derived testifying to the fact that in protractedly running mechanical jaundice there occur changes in the liver characteristic of chronic hepatitis, this finding its reflection in pathological changes of functional (in this instance precipitation) tests, which at this period of mechanical jaundice lose their differential diagnosis value. Determination of the fibrinogen level may be utilized as a differential diagnosis test between mechanical and parenchymatous jaundice.

REEL / FRAME
19771288

USSR

UDC 612.821.6+615.78

MURAV'YEVA, N. P., and SELIVANOVA, A. T., Physiology Department imeni I. P. Pavlov, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"The Effects of Some Neurotropic Drugs on Mechanisms Controlling Complex Rhythmic Stereotypes"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, No 1, Jan/Feb 73, pp 75-81

Abstract: Administration of drugs acting on central H-cholinoreactive systems (pediphen) and on adrenoreceptors (chlorpromazine and amphetamine), of anti-cholinesterase compounds (armin and nibufine), and of an analeptic (caffeine) does not disturb conditioned alimentary reactions of the acoustic rhythmic-mosaic type in dogs (salivation and locomotion toward food pan in response to metronome sounds of certain frequencies, with and without reinforcement). On the other hand, after administration of amyzil, which blocks M-cholinoreactive structures in the brain cortex, the effect of the conditioned stimuli is no longer determined by the rhythmic stereotype but by each stimulus separately. This indicates that M-cholinoreactive structures are of prime significance in the mechanisms regulating mutual interaction between cortical and subcortical

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USSR

MURAV'YEVA, N. P. and SELIVANOVA, A. T., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, No 1, Jan/Feb 73, pp 75-81

areas. The M-cholinoreactive structures are blocked, the functional cortical-subcortical correlation established and simplified during conditioning is disrupted, and therefore the regulatory role of the unconditioned stimulus in the development of systemic nervous processes is temporarily abolished.

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FORMATION OF A LOW FUNCTIONAL STATE OF THE CEREBRAL CORTEX DURING
ELABORATION OF A RHYTHMIC STEREOTYPE -U-
AUTHOR--MURAVYEVA, N.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP
491-498
DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
SCIENCES
TOPIC TAGS--CONDITIONED REFLEX, AUDITION, CEREBRAL CORTEX, EXPERIMENTAL
PSYCHOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/1932

STEP NO--UR/0247/70/020/003/0491/0498

CIRC ACCESSION NO--AP0120577

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POSITIVE AND INHIBITORY ACOUSTIC
CONDITIONED REFLEXES WERE ELABORATED SIMULTANEOUSLY IN A RHYTHMIC
STEREOTYPE IN FOUR DOGS PREVIOUSLY NOT USED IN EXPERIMENT. ALONG WITH
THE FORMATION OF SPECIFIC TEMPORARY CONNECTIONS AND OF A SYSTEMIC
NERVOUS PROCESS WITH WAVE LIKE CHANGES IN EXCITABILITY, A LOW
(INHIBITORY) GENERAL FUNCTIONAL STATE OF THE CEREBRAL CORTEX IS FORMED
IN THESE CONDITIONS. IT IS CHARACTERIZED BY INERTNESS AND DISAPPEARS
SLOWLY EVEN AFTER ELIMINATION OF ALL THE INHIBITORY STIMULI FROM THE
STEREOTYPE, THE ELABORATION OF NEW POSITIVE CONDITIONED REFLEXES TO
SIGNALS OF ANOTHER MODALITY AND ENHANCEMENT OF THE EXCITABILITY OF
SUBCORTICAL CENTRES. FACILITY: PAVLOV PHYSIOLOGY DEPARTMENT,
INSTITUTE OF EXPERIMENTAL MEDICINE, USSR ACADEMY OF MEDICAL SCIENCES,
LENINGRAD.

UNCLASSIFIED

USSR

KAZNACHEYEV, V. I., MURAV'YEV, N. P. and MURAV'YEVA, N. V.

"Analytic Methods of Determination of Full Checking and Diagnostic Tests"

Tr. NII Grazhd. Aviatsin [Works of the Scientific Research Institute for Civil Aviation], 1973, No 83, pp 42-55 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V803)

Translation: A method is suggested for construction of full checking and diagnostic tests for detection and localization of an arbitrary combination of failures in combination systems. A definition is given of the reference formula produced by the properly operating system, the boundary formulas, describing the operation of the system in the case of a defect, and the reference-boundary formulas. All systems are reflected in the general case by two classes of reference formulas -- redundant and nonredundant. The method of synthesis of tests is reduced to determination of the set of nonzero conjunctions of the reference-boundary formulas. Theorems are proven on the completeness of the tests produced. Algorithms and examples of the construction and minimization of tests are presented.

Author's view

1/1

- 77 -

USSR

UDC: 8.74

KAZNACHEYEV, V. I., MURAV'YEV, N. P., MURAV'YEVA, N. V.

"Analytical Methods of Finding Complete Verifying and Diagnostic Tests"

Tr. NII grazhd. aviatsii (Works of the Scientific Research Institute of Civil Aviation), 1973, vyp. 83, pp 42-55 (from RZh-Matematika, No 10, Oct 73, abstract No 10V803 by the authors)

Translation: A method is proposed for constructing complete verifying and diagnostic tests for detecting and localizing an arbitrary combination of malfunctions in compound circuits. The paper defines the reference formula which is realized by the correction circuit, the boundary formulas which describe the operation of the circuit in the case of a malfunction, and reference-boundary formulas. All circuits are represented in the general case by two classes of reference formulas -- redundant and nonredundant. The method of synthesizing tests reduces to finding the set of non-zero conjunctions of reference-boundary formulas. Theorems on the completeness of the resultant tests are proved. Algorithms and examples of construction and minimization of tests are given.

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1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DECAY OF ZIRCONIUM 97 -U-
AUTHOR-(03)-MININOSHVILI, Z.N., ~~MURAVYEVA, Y.V.~~ SOROKIN, A.A.
COUNTRY OF INFO--USSR M
SOURCE--IAV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 62-8
DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ZIRCONIUM ISOTOPE, RADIOACTIVE DECAY SCHEME, GAMMA SPECTRUM,
COINCIDENCE COUNTING, SEMICONDUCTOR DETECTOR, TRANSITION RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0227

STEP NO--UR/0048/70/034/001/0062/0068

CIRC ACCESSION NO--AP0105303

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105303

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GAMMA SPECTRA AND COINCIDENCE SPECTRA WERE STUDIED BY USING SEMICONDUCTOR GE(LI) AND SI(LI) DETECTORS WITH HIGH RESONS. THE DECAY SCHEME BY A. A. SOROKIN, ET AL. (CA 58: 9809H) WAS CORRECTED BY INCLUDING NEW LEVELS (1250, 1276, AND 1549 KEV) IN PRIME97 NB. CONVERSION COEFFS. OF THE 255 AND 357 KEV TRANSITIONS WERE SMALLER THAN 0.02 AND (5 PLUS OR MINUS 2.5) TIMES 10 PRIME NEGATIVE3, RESP., WHICH CORRESPONDED TO E1 AND M1 TRANSITIONS. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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BAKIYEV, S. A., KORDYUKOVICH, V. O., KRYUKOVA, L. N., MURAV'YEVA, V. V., and
SOROKIN, A. A., Scientific Research Institute of Nuclear Physics of Moscow State
University imeni M. V. Lomonosov

"Investigation of Radioactive Decay of Neutron Deficient Isotopes of Pt, Ir, and Os"
Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 34, No. 1, Jan 70,
pp 59-61

Abstract: The γ -radiation of neutron deficient isotopes Pt^{187} , Pt^{188} , Ir^{189} , and
 Os^{185} formed by bombarding gold with protons on the synchrocyclotron of the Joint
Institute of Nuclear Research was investigated on a Ge(Li)-spectrometer. A che-
mical method was used to separate the disintegration products of the gold. The
energies and relative intensities of the γ -rays are presented in tables for each of
the isotopes. The experimental values obtained are compared with data of other
authors. In the case of Pt^{189} , it was difficult to separate the lines of Pt^{189} in
 Pt^{191} , so only upper limits of the intensity were given for γ -rays of 81 and 94 kev.
The discrepancy in the intensities of the lines 94, 140, and 300 kev with data of
Fourier, et al were beyond the limits of the experimental error; it was impossible

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BAKIYEV, S. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 34, No. 1, Jan 70, pp 59-61

to explain this divergence by the possible contribution of lines caused by the presence of other isotopes in the platinum fraction. Explanations of certain other discrepancies in the measurements are offered.

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USSR

UDC 669.14.018.58.001.6

YELYUTINA, G. I., KAL'NER, D. A., and MURAV'YEVA, YE. M.

"Magnetic Steel for Welded Bimetallic Rotors"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys --- Collection of Works), No 77; Metallurgiya Press, 1970, pp 200-207

Translation: A magnetic high-strength steel, type 30Kh3V2M, is developed with room temperature ultimate strength over $1,000 \text{ Mn/m}^2$ ($> 100 \text{ kg/mm}^2$), yield point greater than 800 Mn/m^2 ($> 80 \text{ kg/mm}^2$), and impact toughness 1250-1450 kJ/m^2 (12.5-14.5 $\text{kg}\cdot\text{m/cm}^2$). The steel has great hardenability, good weldability, low tendency to superheating, and good resistance to tempering. After hardening from 1150°C in oil and double annealing at 625°C (2+8 hr), it has high magnetic properties at room temperature: $B_{25} = 1.38-1.44 \text{ T}$ (13,800-14,400 gs); $B_{400} = 1.86-2.0 \text{ T}$ (18,800-20,600 gs).

Type 30Kh3V2M steel can be used for welded bimetallic rotors of high-speed, powerful electrical machines, due to its combination of mechanical, magnetic, and technological properties. 4 figures; 8 tables.

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1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE ROLE OF GENOTYPICAL FACTORS IN THE ORIGIN OF HEMORRHAGICAL
STROKES -U-
AUTHOR-(03)-DAVIDENKOVA, YE.F., KOLOSOVA, N.N., MURAYYEVA, Z.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 4, PP 506-511
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, HEMORRHAGE, BLOOD COAGULATION, HYPERTENSION, ARTERY,
ATHEROSCLEROSIS, ENDOCRINE SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1988/1662

STEP NO--UR/0246/70/070/004/0506/0511

CIRC ACCESSION NO--AP0106408

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0106408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENTATION IS RELATED TO CLINICAL, GENEALOGICAL AND BIOCHEMICAL DATA OF 83 PROBANDS WITH SUBARACHNOIDAL AND INTRABRAIN HEMORRHAGES AND 168 MEMBERS OF THEIR FAMILIES. ANALYZING THEIR PEDIGREE A DEMONSTRABLE WIDE DISTRIBUTION OF VASCULAR PATHOLOGY WAS EVIDENT IN THE FAMILIES OF PATIENTS WITH SUBARACHNOIDAL (24.3PERCENT) AS WELL AS WITH INTRACEREBRAL (21.7) HEMORRHAGES. A STUDY OF THE COAGULATIVE AND ANTICOAGULATIVE SYSTEMS, INCLUDING THE ENZYMIC BLOOD ACTIVITY (FACTOR VII, FACTOR VIII) DEPICTED DISTINCT SIGNS OF HYPOCOAGULATION IN SOME OF THE PRACTICALLY NORMAL MEMBERS OF THE STUDIED FAMILIES. A TENDENCY TO CHANGED BLOOD COAGULATION PROPERTIES IN FAMILIES OF PATIENTS WITH HEMORRHAGES WAS ACCOMPANIED BY A HIGH FREQUENCY AND EARLY DEVELOPMENT IN THE FAMILIES OF PROBANDS OF HYPERTENSIVE DISEASES, ARTERIAL HYPOTENSION, ATHEROSCLEROSIS, AS WELL AS VEGETATIVE VASCULAR AND ENDOCRINOLOGICAL DISORDERS.

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USSR

UDC 616-001.17:001.33

MURAZYAN, R. I., Doctor of Medical Sciences, Central Institute of Hematology and Blood Transfusion

"Classification of Burn Sickness and Transfusion Treatment of Burn Shock"

Leningrad, Vestnik Khirurgii imeni I. I. Grekov, "Meditsina," Vol 107, No 8, Aug 71, pp 68-73

Abstract: Clinical classification of burn sickness into four degrees -- mild, moderately severe, severe, and extremely severe -- on the basis of the shock condition of the patients has been developed. First degree burn shock includes patients with burn areas no larger than 20% and deep burns not exceeding 10% of the body surface. Second, third, and fourth degrees of burn shock comprises patients with burn areas and deep burns involving respectively 21-50% and 10-29%, 51-80% and 30-59%, and 81% and over, and 60% of the body surface. The last three degrees of burn shock are usually accompanied by hemodynamic and respiratory disturbances, myocardial hypoxia, hyperpotassemia and hypernatremia, oliguria, and other functional disorders, and may be lethal to aged patients. In all cases of burn shock transfusion of blood and blood substitutes and infusion of other fluids such as solutions of electrolytes, 1/2

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MURAZYAN, R. I., Vestnik Khirurgii imeni I. I. Grekov, "Meditsina," Vol 107,
No 8, Aug 71, pp 68-73

novocaine, and other substances in most cases proved to be unsuccessful.
Special regimens for transfusion therapy have been worked out depending on
the degree of burn shock, general symptoms, and type of the transfusion fluid.

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Hematology

USSR

UDC 617-001.36-02:617-001.17-085.384-036.8

MURAZYAN, R. I., Central Institute of Hematology and Blood Transfusion

"Efficacy of Dextran Transfusion in Burn-Induced Shock"

Moscow, Khirurgiya, No 11, 1971, pp 68-71

Abstract: Transfusion of burn patients with 1.5 to 3 liters of dextran (called polyglucin in the USSR) and various electrolytes had a distinctly beneficial effect in those whose burns covered up to 50% of the body surface. When transfused within 48 hours of the burn, dextran increased the volume of circulating blood, corrected arterial hypotension and increased osmotic pressure and entry of protein into the vascular bed. However, the preparation was less efficacious in those with burns covering more than 50% of the body surface. Dextran did not impair blood coagulation although it intensified diuresis. The results of dextran transfusion were much better than when salt solutions alone were used.

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USSR

UDC 617-001.17-07:[612.118.24+616.5-002.157-003.2

KORYAKINA, I. K., GORBUNTSOVA, R. V., GERASIMOVA, L. I., and MIRAZYAN, R. I.,
Pathophysiology Laboratory and Surgical Department, Central Institute of
Hematology and Blood Transfusion, Ministry of Health USSR, Moscow

"Comparison of the Toxicity of Blood Serum and Contents of Blisters in Burn
Victims"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 5, 1971, pp 44-46

Abstract: The toxicity of serum and exudate from blisters of persons suffering from burns covering 10 to 75% of the body surface was studied by the hemoculture method (leukocyte film). Activity was assessed from the extent of leukocyte migration after the cultures were incubated at 37°C for 18 hours. (Serum from healthy persons stimulates leukocyte migration). Fluid obtained from blisters within a few hours of the burn had a pronounced toxic effect on the hemocultures (-30, but serum from the same patients was much less toxic (-6) and in some cases had no effect at all. In one case (the burn affected 30% of the body surface), the blister fluid inhibited leukocyte migration (-33) while serum obtained at the same time slightly stimulated it (+4). Since the difference between the toxicity of serum and blister contents

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KORYAKINA, I. K., et al., Problemy Gematologii i Perelivaniya Krovi, No 5, 1971, pp 44-46

diminished steadily with time, it is suggested that prompt removal of blisters is a worthwhile therapeutic procedure because it eliminates one of the sources of intoxication associated with burns.

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Burn Studies

USSR

UDC 616-001.17-06:616-001.36-07:616.153.96-074

MURAZYAN, R. I., Doctor of Medical Sciences, and AKSENOVA, O. V., Surgical Clinic, Central Institute of Hematology and Blood Transfusion, Ministry of Health USSR, Moscow

"Changes in Serum Proteins in the Shock Phase Following a Burn"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 5, 1971, pp 41-44

Abstract: The composition of serum proteins was studied by paper electrophoresis in burn victims (14 to 50 years of age and over 50) differing in area and degree. Total proteins decreased in direct proportion to the extent of the burn in all those with more than 10% of the body area affected. The decrease, mostly due to the albumins, was sharpest on the 3d day after the trauma. However, there was an increase in the α_1 and α_2 globulins, especially in those with burns covering more than 50% of the body surface. The magnitude of the changes was not age-related.

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